1470 to 1501, in the first half-century of printing, Bartholomew was represented nineteen times. Not a great number in the 28,000 editions of Incunabula or Cradle Books, but sufficient to entitle him to a place as one of the most popular writers of his time. Nor did his popularity then wane, for by 1582 fifteen more editions of the *De Proprietatibus* had appeared, making, all told, thirty-four printed editions over a period of three centuries, certainly a best-seller, outshining even our modern best-sellers. Incidentally, the last complete edition, an English one, appeared as late as 1907, and as recently as 1933 the *De Proprietatibus* was the subject of a long essay in one of our contemporary journals.

When Doctor Vollbehr, best remembered as the man who amazingly sold the United States Government a million dollars' worth of Incunabula, came to Los Angeles, he was visited by Doctors Dock and Belt and the librarian to see his collection, with the result that the monk, Bartholomew, is now represented on the shelves of our library by a copy of his *De Proprietatibus Rerum,* printed in 1491, and containing Doctor Vollbehr's bookplate of his *Inkunabel-Sammlung.* This Incunabulum takes its place alongside the only other in our library, the *Divinarum Institutionum,* by Lactantius, presented by our friend of San Francisco, Dr. Chauncey Leake.

To bibliophiles, the presence of these books gives a sense of completeness heretofore lacking in our library. To explain this would mean a discussion of the significance of Incunabula in the history of books and all that the word "books" implies. It will suffice to briefly outline what thoughts our copy of the *De Proprietatibus* arouses on being lifted from its protective casing. Despite the suggestion of fragility which this casing and the knowledge of its 446 years of age bring forth, it is a good, sturdy, substantial book, as it had to be when it was loaned out to medical students for a set fee, as was done in the medieval precursors of our modern lending libraries. The binding is of vellum, an ancient Latin leaf from some ecclesiastical manuscript, covered with carefully formed characters and decorated initial letters in still brilliant blue and red. On opening the book there is no title page; instead, on the last leaf there is the printer's colophon, which in those early days of printing performed the same function as our modern title-page. Here we find that the book was printed by one known as George Husner in 1491 at Strassburg, or Argentine as it was then called; that the title of the book is *De Proprietatibus Rerum* and the author, Bartholomaeus Anglicus, Ordinis fratris minor. Turning back to the fly leaf we find written thereon in browned ink, "Ex Libris, Ivan Paul Kaid, M. D. 1659." Who was Doctor Kaid?

Turning the page, we reach the table of contents and here we search for some insight into the character of the author and the reason for the popularity of his writing. We see that he has divided his book into nineteen chapters as follows:

1—On God, 2—On Angels, 3—On Rational Animals, 4—On Body Substance, 5—On Man and His Parts, 6—On Ages, 7—On Diseases, 8—On Earth and Heaven, 9—On Time and Its Subdivisions, 10—On Elements, 11—On Air, 12—On Birds, 13—On Water and Fishes, 14—On Earth and Its Regions, 15—On Countries, 16—On Stones and Metals, 17—On Herbs and Plants, 18—On Animals, 19—On Music, Colors, Hunting.

On leafing through the book we find the text in Latin, arranged in well-printed double columns of Gothic type. Written in a concise yet readable style, interspersed with touches of dry humor and homely comments on everyday life, it is not to be wondered that edition after edition was necessary to satisfy the reading hunger of a populace just beginning to loosen its belt after the mental famine of the Dark Ages.

Lack of space does not permit a more detailed description of, or comments on the character of Friar Bartholomew's encyclopedic knowledge. Even in the thirteenth century his Chapter 7, *On Diseases,* was a bit behind the times. His discussion of catarrh, sneezing, difficult breathing, phthisis, and quotidean fever were somewhat dated, but then, what text is not, even in these days of rapid communication and ceaseless turning of the presses?

Bartholomaeus Anglicus' *De Proprietatibus Rerum,* 1491, rests on our shelves, fit subject for bibliophilic gossip. May its tribe increase.

1136 West Sixth Street.

CLINICAL NOTES AND CASE REPORTS

CONTRACTION RING DYSTOCIA: TREATMENT WITH EPINEPHRIN

REPORT OF CASES

By BENJAMIN BAKEWELL, M.D.
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TWO patients, suffering from contraction ring dystocia, are here reported:

CASE 1.—Mrs. C., age 23, a healthy young primipara with history and physical examination negative, missed her period in November, 1933, and went through a normal and uneventful pregnancy. She went into labor July 28, 1934, and accomplished a normal delivery twenty-four hours later after a second stage of only thirty-five minutes. She received pentobarbital and scopolamin in the first stage and gas-oxygen in the second. Her labor developed slowly but normally, and her expulsive pains were regular, strong, and effective.

After the delivery at 3:36 a. m., it was noted that there was exceptionally little blood loss. While waiting for the delivery of the placenta a second-degree episiotomy was repaired, and immediately thereafter, at 4 a. m., an unsuccessful attempt was made to deliver the placenta by the usual methods, and one ampoule of pituitrin was given. At 4:35 a. m., one hour after the delivery of the baby and after a number of futile attempts to deliver the placenta, a manual extraction was attempted and one hand was passed through the dilated cervix into the uterus. The condition there encountered was strange and unusual to a degree. The hand easily entered the cervix, but instead of passing up into the open uterus, it encountered a funnel of contracting uterine wall ending in a tight rigid ring through which it was impossible to introduce even a finger. It was at once evident that here was a typical hour-glass contraction of the uterus.

COMMENT

The problem then immediately developed itself: What measures must be taken to get past the obstruction and deliver the placenta? A contraction ring always develops below or around some object, whether it be the child's body or the placenta, and the danger to the mother lies, not in the ring itself, but in the necessity for the removal of that which cannot be allowed to remain in the uterus.

The first question was, is this an immediate emergency? Must something be done without a moment's waste of time? The answer was, no. There is perhaps only one purely obstetric third-stage emergency which must be acted upon immediately, and that is hemorrhage. In this case there was not only no hemorrhage but, as already stated, there was less than the normal amount of bleeding. I must confess here that my memory did not bring to mind any routine, usually effective method of relaxing the contraction, and my first reaction was that I was facing the necessity of forcing my way through the ring. This procedure must be undertaken after preliminary attempts at relaxation with deep anesthesia, morphin and atropin, and I visualized, of course, all the possible complications of such an undertaking—shock, hemorrhage, infection, or possibly even rupture of the uterus—and was appalled at subjecting my patient to this experience, normal and uncomplicated as her labor had been up to this period. It was then suggested that epinephrin might be tried to bring about a relaxation of the contraction, and 10 minims was given hypodermically and repeated fifteen minutes later. The hand was again introduced into the uterus, and the ring was felt to slowly give way under moderate pressure. The hand finally slipped through and an adherent placenta was encountered. This was detached by gently slipping the fingers under the adhesions, and delivered. The puerperium was uneventful, and the mother and her child were discharged two weeks later in normal condition.

A review of the literature at my disposal was then undertaken to determine what procedure was advised to be followed in hour-glass contraction. De Lee's "Practice of Obstetrics" cannot be found to more than mention this condition, citing it as a cause of postpartum hemorrhage. No suggestions are given as to its etiology or treatment. However, in discussing tetanic or Bandl's ring contraction about the infant, deep anesthesia and possibly cesarean section is advised.

"Gynecology and Obstetrics" by Curtis, published in 1933, is equally sketchy in regard to hour-glass contraction. The condition is mentioned as occurring, and deep ether anesthesia is advised. In discussing Bandl's ring contraction, deep ether anesthesia is suggested. It states that spinal anesthesia has been tried with good results, and quotes Rucker as saying that five minims of adrenalin may be effective.

I was unable to find any reference in any of our magazines for the last five years to hour-glass contraction, but did find several pertinent articles in regard to Bandl's ring contractions and allied conditions, all, however, very recent.

Dr. Pierce Rucker was evidently the first to suggest the use of adrenalin in contraction ring dystocias. He published an article in 1927 wherein he reported two cases in which the spasm was relaxed by the injection of five minims of adrenalin. He suggested that the spasm is caused by stimulation of the bulbo sacral nerves, while the relaxing mechanism is controlled by the sympathetic fibers. It is these latter that are stimulated by adrenalin. In 1923 Urner reported a case of uterine inversion in which the resultant cervical and uterine spasm was relaxed by gas-ether anesthesia, atropin sulphate, grain 1/150, and one-half cubic centimeter of adrenalin solution. The relaxation was sufficient to permit the inversion to be relieved.

The physiological action of epinephrin is of interest in this connection. Adrenalin is said to affect the plain muscles through stimulation of the sympathetic fibers, so that the result of its action depends upon whether these fibers produce contraction or relaxation. The well-known clinical effect of contracting the skin arterioles, as in the treatment of urticaria, or relaxing the bronchial tree, as in the treatment of asthma, are cases in point. Epinephrin also relaxes certain spasms of the intestinal tract. There is apparently still some confusion as to its exact effect on the muscles of the uterus, but the preponderance of opinion is that this effect is to relax them.

In 1930 Rudolph and Ivy published an article on the physiology of the uterus in labor of the dog and the rabbit. They studied the effect of various drugs on the uterus of these animals while pregnant and during labor, and concluded that, experimentally at least, epinephrin abolishes temporarily the spontaneous activity of both the pregnant and nonpregnant uterus of the dog *in situ* and also the activity excited by the use of pituitrin and ergotamin.

In another article, published by Ivy, Hartman and Koff in 1931, on the contractions of the monkey uterus at term, it is stated that pituitrin causes spastic contraction over the entire uterus followed by intermittent contractions without full relaxation, while epinephrin causes a primary contraction followed by temporary relaxation. They also state that epinephrin abolishes the contractions due to pituitrin and ergotamin.

The second case of contraction ring was encountered in a patient of Dr. William E. Johnson, and was as follows:

CASE 2.—Mrs. L. S., age 30, gravida three, para one, gave a history of having had a tubal pregnancy with operation seven years ago, and one induced abortion. Her last menstruation occurred May 17, 1934, and she went through a normal pregnancy, going into labor at 8 a. m. January 29, 1935, about three weeks before term. The membranes were ruptured artificially at 11 p. m., and at 12:50 a. m. she received quinin sulphate, grains ten, to stimulate lagging pains. She also received nembutol and hyoscin in the first stage. Finally, instrumental delivery being indicated, Kielland's forceps were applied under gas-oxygen anesthesia and the head delivered. Some difficulty was encountered in delivering the shoulders, as they seemed not to come down properly, but they and the arms were finally delivered. From this point no more progress could be made, even with repeated strong traction. This appeared, on the face of it, to be a strange dilemma. The large head, the slightly smaller shoulders, delivered and

yet the body, pelvis and legs resisting delivery. The only possible explanation seemed to be a large fetal tumor. External palpation did not furnish any clue.

The next step to be taken was to explore as thoroughly as possible the cavity of the uterus and the retained portion of the child, and for this purpose the hand was slipped with considerable difficulty up along the baby's body until the fingers reached the level of the lower border of the ribs, where there could be felt a resistant band of hard contracted muscle about the body through which it was impossible to pass more than the tips of the fingers, and this only by depressing the soft tissues of the infant. Again it was evident that we were confronted with a contraction ring. One cubic centimeter of adrenalin was given at once, and a few moments later, with traction on the head and shoulders, the child slowly delivered. The infant was found to be an ascitic monster, with an abdomen measuring 40 centimeters in circumference and with a double hydronephrosis, and it was this distended abdomen that was caught behind the contraction ring.

Here again epinephrin seems to have been the instrument by which a serious situation was changed into one of very little moment.

COMMENT

These two cases are reported that we may call attention to the use of epinephrin in contraction rings; but they may also be used to bring out another suggestion. It would seem to the author that we are too prone to force the uterus in situations where, unknown to us, the unconscious nervous mechanism seems to realize that further expulsive effort may be useless or dangerous.

In the first instance, the very common practice of administering pituitrin in the third stage probably precipitated the contraction ring spasm in a uterus containing an immovable adherent placenta; while in the second case the laboring, overloaded uterus was whipped into a spasm with quinin. Neither of these labors were long nor exhausting, as is usually the case where a contraction ring develops; so that it seems reasonable to lay the blame on the oxytoxics for these two cases of contraction ring dystocia.

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PHARYNGO-ESOPHAGEAL DIVERTICULUM

By JOSEPH E. TILLOTSON, M.D.
Woodland

DIVERTICULUM of the pharynx is an acquired hernia of the mucosa and submucosa, between the fibers of the inferior constrictor muscle of the pharynx or between the fibers of the cricopharyngeous. The pouch develops in the middle part of the posterior wall. Anatomically the pouch is of pharyngeal origin, but its symptoms are referable to the esophagus which is stenosed through compression by the pouch.[1] The first case of this type was reported during the time of William Hunter, and the specimen is still preserved in the Hunterian Museum, Glasgow.[2] Since then cases have been reported at different times, though the lesion would seem to be relatively uncommon. In a collected series of 878 patients suffering from pharyngeal or esophageal lesions, McMillan[3] reported 3 per cent as pharyngeal diverticula. Carcinoma of the esophagus, the most common type lesion in this group, was ten times more frequent than the diverticulum.

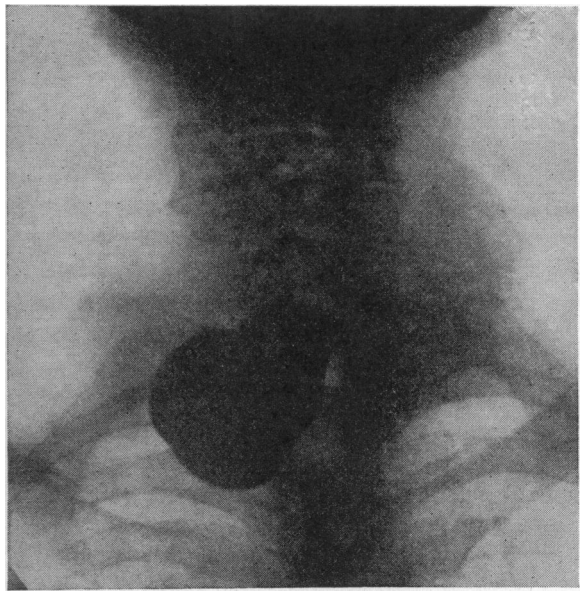

Fig. 1.—V. S. P. Age 59. Large pharyngo-esophageal diverticulum filled with barium mixture. It is directed toward the right side and extends into the upper mediastinum. There were marked symptoms; return of undigested food, delayed swallowing, paroxysms of coughing, and dyspnea.

REPORT OF CASE

V. P. S., male, age fifty-nine, was admitted to Yolo County Hospital, Woodland, California, January 25, 1936. Symptoms were of eight years' standing, and developed gradually until the last six months, when they progressed rapidly and became marked. The first difficulty noticed was that food seemed to catch on swallowing. Undigested pieces of food often returned into his mouth involuntarily. Other people would finish a meal, while he would only begin to eat. During the last six months there were frequent paroxysms of coughing and dyspnea. The patient lost weight; became apprehensive; was fearful of going to sleep; deliberately lived near an emergency hospital, where he might receive hypodermic injections of adrenalin, which temporarily relieved the asthma-like paroxysms of cough and dyspnea.

A nontender fullness in the lower right side of the neck was palpable; at times it changed in size. A barium film showed a well-defined pouch directed toward the right and extending into the upper mediastinum, shown in Figure 1. Dr. R. S. Tillotson examined the patient with esophageal speculum and reported the mouth of the diverticulum was entered by the instrument without difficulty, and that the subdiverticular opening of the esophagus was identified anteriorly.

At operation the anesthetic used was evipal intravenously. Preliminary to this a small rubber tube was passed through the nose to the stomach. An incision was made along the anterior border of the sternomastoid muscle, from the superior border of the thyroid cartilage to the suprasternal notch. The anterior jugular vein was ligated; the deep cervical fascia was divided; then the omohyoid muscle divided; the thyroid and larynx retracted medially, and the carotid vessels laterally. The sac was fairly easy to identify, as it came out from between the esophagus and the bodies of the lower cervical vertebrae toward the right and into the upper mediastinum. It was freed to its junction with the pharynx. When isolated, to the touch it felt very much like a normal gall-bladder and had a somewhat similar gross appearance. Since the pouch went fairly well into the

1 Jackson, Chevalier: Bronchoscopy and Esophagoscopy, Saunders, 1927.

2 Moynihan, Berkeley: The Surgical Treatment and Management of Pharyngo-Esophageal Diverticulum, Surg., Gynec., and Obst., 54:128 (Jan.), 1932.

3 MacMillan, A. S.: Statistical Study of Diseases of the Esophagus, Surg., Gynec., and Obst., 60:394-402 (Feb.), 1935.